

Laoise Murray

Home University: National University of Ireland, Galway

Field of Study: Organic/Medicinal Chemistry

Host Institution: Heinrich Heine Universität, Düsseldorf

Spending the summer in Germany and working full time in a lab was an incredible experience for me. I gained invaluable experience and skills for my future scientific career, while also travelling around Europe and making lifelong friends. I was based in Düsseldorf, a fabulous city on the Rhine which is ideally located for travel to France, Belgium and the Netherlands. I worked in the Institute for Pharmaceutical and Medicinal Chemistry at Heinrich Heine University. As it was my first experience of research in a lab, I was quite nervous at the beginning, however my PhD student mentor and my lab colleagues were very welcoming and I soon settled in to the daily routine of the lab.

My project was an organic chemistry research project which involved the synthesis of novel histone deacetylase (HDAC) zinc finger domain inhibitors. The aim of my project was to modify a known HDAC inhibitor in order to obtain new molecules with increased affinity at the zinc finger domain. I found the project I was working on very interesting and engaging and no two days were the same. The project was well designed and planned, which allowed me to achieve a significant amount in a short period of time, while obtaining experience in a range of different areas. From an academic standpoint, this experience met and exceeded my expectations regarding learning new skills and doing new chemistry. There were many opportunities to learn, such as the chance to develop skills in a range of analytical techniques and purification methods. By the end of my internship, I felt a lot more confident working independently in the lab and using various equipment. My lab colleagues were always willing to lend a hand and answer my frequent questions, whether it be about my project or some interesting part of German culture that I had noticed.

Although the working language in my lab was English, the majority of my colleagues were German so we also spoke a lot of German. This gave me the great opportunity to practice my German, which had been at its peak when I was studying it in school but had become rusty in recent years. It was particularly interesting to learn so much German vocab for working in the lab, such as words for specific lab equipment and chemicals. Some words that I had barely even come across in English before I was now learning in German which was challenging but fun!

A typical day in the lab for me began at 8:30, when I would start to plan out my day. After discussing my plan with my PhD student mentor, I then began my day's work. Depending on the day, this involved setting up a new reaction, continuing the work-up of a previous day's reaction, performing analytics on the products of my reactions or interpreting analytics from the previous day's reactions. At first, it was difficult to plan my day and I needed a lot of help interpreting my data but as time went on, I became more independent and needed to ask less questions. I also had the amazing opportunity to be involved in a Review publication that members of the lab group were writing at the time of my stay. I was offered co-authorship of this publication, which has been accepted and is due to be published soon.

As I am from Ireland and an EU citizen, I did not find the logistics of moving to Germany too difficult. I stayed in on campus student accommodation which was very convenient and not too difficult to organise. The International Office at my host university were very helpful and provided me with reasonably priced accommodation. I had my own bedroom, kitchen and bathroom, which was great but it did mean it was difficult to meet other students as I was living by myself. Luckily, there were many other RISE interns working at the same university and we quickly became firm friends. We all purchased InterRail train tickets and travelled to a different city almost every weekend. It was amazing to experience so many different cultures and although it was tiring doing so much travelling, it was definitely worth it!

Overall, I would rate my experience doing research in Germany as very positive. As well as greatly improving my lab and research skills, living abroad for three months definitely broadened my horizons and increased my independence. I am now considering returning to Germany for masters study, which I think is a good reflection of the RISE programme!

"I agree that my report and accompanying pictures may be used by the DAAD in printed materials, presentations, and on websites in order to inform funding organizations, sponsors, and students about the RISE program."